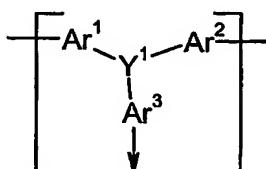


CLAIMS

1. An electroluminescent device having an anode and a cathode, one of which is transparent, and one or more organic layers between said anode and said cathode, at least one of said organic layers comprising an organic electroluminescent material, wherein at least one of said organic layers comprises a polymeric material having repeat units of Formula 1:

5  
10 Formula 1:



15  
20  
25  
30 wherein:

Y<sup>1</sup> represents, independently if in different repeat units, N, P, S, As and/or Se, preferably N ; Ar<sup>1</sup> and Ar<sup>2</sup> are aromatic groups and Ar<sup>3</sup> is present only if Y<sup>1</sup> is N, P, or As in which case it too is an aromatic group; wherein Ar<sup>1</sup> and Ar<sup>2</sup> are the same or different and represent, independently if in different repeat units, a multivalent (preferably bivalent) aromatic group (preferably mononuclear but optionally polynuclear) optionally substituted by at least one optionally substituted C<sub>1-40</sub> carbonyl-derived groups and/or at least one other optional substituent; and Ar<sup>3</sup> represents, independently if in different repeat units, a mono or multivalent (preferably bivalent) aromatic group (preferably mononuclear but optionally polynuclear) optionally substituted by at least one optionally substituted C<sub>1-40</sub> carbonyl-derived group and/or at least one other optional substituent, and wherein the average number, m, of said repeat units in the polymer is at least 35

2. An electroluminescent device as claimed in claim 1 wherein the average number, m, of said repeat units in the polymer is at least 40.

3. An electroluminescent device as claimed in claim 1 or 2 wherein the polymeric material is ring substituted by at least one optionally substituted linear, branched or cyclic carbonyl-derived group, which is C<sub>6</sub> or higher,

4. An electroluminescent device as claimed in claim 3 wherein the at least one optionally substituted linear, branched or cyclic carbonyl-derived group comprises an alkyl or alkoxy group.

5 5. An electroluminescent device as claimed in any one of the preceding claims wherein the polymeric material is polydisperse.

10 6. An electroluminescent device as claimed in any one of the preceding claims wherein the device comprises only one organic layer such that the organic layer comprising the polymeric material is the same layer as the layer comprising the electroluminescent material.

15 7. An electroluminescent device as claimed in any one of claims 1 to 5 wherein the device comprises two or more organic layers, the at least one organic layer comprising the polymeric material being separate from the at least one organic layer comprising the electroluminescent material and being located between the layer comprising the electroluminescent material and the anode.

20 8. An electroluminescent device as claimed in any one of the preceding claims wherein the polymeric material is used as an admixture of the polymeric material with one or more other polymeric or monomeric materials having different electrical and/or physical properties.

25 9. An electroluminescent device as claimed in claim 8 wherein the admixture comprises a blend of two or more of the polymeric materials claimed in claim 1.

10. An electroluminescent device as claimed in any one of the preceding claims wherein the polymeric material has been deposited from solution.

30 11. An electroluminescent device as claimed in any one of the preceding claims wherein the polymeric material has been applied by a coating or printing technique selected from the following group: dip coating, roller coating, reverse roll coating, bar coating, spin coating, gravure coating, lithographic coating (including photolithographic processes), ink jet coating (including continuous and drop-on-demand, and fired by piezo or thermal processes), screen coating, spray coating and web coating.

35 12. An electroluminescent device as claimed in any one of the preceding claims wherein the thickness of the layer comprising the polymeric material is greater than 40 nm.

13. An electroluminescent device as claimed in claim 12 wherein the thickness of the layer comprising the polymeric material is greater than 60 nm.

5 14. An electroluminescent device as claimed in claim 13 wherein the thickness of the layer comprising the polymeric material is greater than 100 nm.

10 15. An electroluminescent device as claimed in claim 14 wherein the thickness of the layer comprising the polymeric material is greater than 200 nm.

16. An electroluminescent device as claimed in any one of claims 12 to 15 wherein the thickness of the layer comprising the polymeric material is up to 500 nm.

15 17. An electroluminescent device as claimed in any one of the preceding claims wherein the polymeric material has a hole mobility greater than  $10^{-3} \text{ cm}^2 \text{V}^{-1} \text{s}^{-1}$ .

18. An electroluminescent device as claimed in any one of the preceding claims wherein the polymeric material forms an ohmic interface with the anode.

20 19. An electroluminescent device as claimed in any one of the preceding claims wherein the anode comprises an oxide of indium and tin (ITO)

25 20. An electroluminescent device as claimed in claim 19 wherein the polymeric material has an ionisation potential in the range 4.8 - 5.2 eV.

21. An electroluminescent device as claimed in any one of the preceding claims wherein the layer comprising the polymeric material is in direct contact with the anode.

30 22. An electroluminescent device as claimed in claim 21 wherein the layer comprising the polymeric material is the only organic layer between the anode and the layer comprising the electroluminescent material.

23. An electroluminescent device as claimed in any one of the preceding claims wherein the polymeric material is mixed in a binder resin.

35 24. An electroluminescent device as claimed in any one of the preceding claims wherein the binder resin is selected from the group: polyamide, polyurethane, polyether, polyester, epoxy resin, polyketone, polycarbonate, polysulphone, vinyl polymer, polystyrene, polyacrylamide, copolymers thereof and/or mixtures thereof.

25. An electroluminescent device as claimed in any one of the preceding claims wherein the layer comprising the polymeric material is crosslinked.

5 26. An electroluminescent device as claimed in claim 25 wherein the layer is crosslinked by crosslinking of the polymeric material and/or by crosslinking of the binder resin.

10 27. An electroluminescent device as claimed in any one of the preceding claims wherein the electroluminescent material, in use, emits blue light.

15 28. An electroluminescent device as claimed in any one of the preceding claims which is a top emission device wherein the transparent electrode is deposited after the layer comprising the polymeric material.

29. A method of forming an electroluminescent device as claimed in any one of the preceding claims comprising depositing from a solution the layer comprising the polymeric material.

20 30. A method of forming an electroluminescent device as claimed in claim 29 further comprising depositing at least one other layer by vapour deposition.